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*With Report of a Case of Gastro-Enterostomy and One of
End-to-End Approximation.*

BY

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SYSTEM; VISITING SURGEON TO ST. JOSEPH'S HOSPITAL.

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**INTESTINAL APPROXIMATION, WITH REPORT
OF A CASE OF GASTRO-ENTEROSTOMY
AND ONE OF END-TO-END
APPROXIMATION.¹**

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At the request of your President I herewith pre-
sent the report of two interesting cases in which I
made use of the Murphy button for anastomotic
purposes between portions of the alimentary tract.
The fact that both cases resulted fatally does not
deter me from reporting them, for it is from our
failures that we often gain much information.

CASE I.—James G. came under my notice late in
August, complaining of constipation, loss of appe-
tite, occasional vomiting, a moderate loss of flesh,
and a feeling of languor. A superficial examina-
tion revealed nothing of an organic nature. Various
lines of medical treatment were used, but without
improvement, and the man was sent to St. Joseph's
Hospital about August 27th. When admitted to the
hospital he was very much constipated; large doses
of magnesium sulphate, oleum tiglii, etc., had little

¹ Read before the Denver and Arapahoe Medical Society, De-
cember 11, 1894.



or no effect on him; enemata were resorted to daily to produce an evacuation; this extreme constipation continued; nausea and vomiting came on as a constant symptom; he rapidly lost flesh; he could retain nothing on his stomach but very small quantities of beef-juice. There was no rise in temperature. Examination at this time showed a stomach considerably dilated, reaching down nearly to the umbilicus; there was no pain or tenderness. The noticeable feature of the examination was the great peristaltic action of the stomach-walls; the wave of contraction could be seen beginning at the cardiac orifice and travelling slowly along the greater curvature until it reached the pylorus, where it stopped abruptly; at times the contraction assumed an hour-glass character. Upon two separate examinations I could feel at the pylorus, just as the peristaltic wave reached that point, a hard mass, ill-defined in shape and size. I made a diagnosis of tumor of the pylorus and advised an operation, which was refused by the patient and his friends. The patient was examined by a number of surgeons, among them being Dr. Hartman, of Chicago. It was agreed by all that the case was in all probability one of carcinoma of the pylorus, although some symptoms were lacking to make a perfect history; operation was advised by all.

On September 12th the patient finally agreed to the operation, and accordingly on the morning of the 13th, with the assistance of Drs. L. E. Lemen and J. W. O'Connor, I operated. I made a median incision, found a hard, nodular mass at the pylorus, extending from that point along the walls of the stomach for a distance of three inches; the duodenum was isolated with very great difficulty on account of its contracted condition. An opening was made in the duodenum at a point about oppo-

site the entrance of the ductus communis chole-
 dochus, and one-half of a medium-sized Murphy
 button inserted; the other half was inserted in the
 stomach on the posterior surface about three inches
 and a half from the pylorus; the two portions of the
 button were then firmly pressed together. The
 abdominal cavity was flushed out with a normal salt-
 solution and the abdominal wound stitched up with
 silkworm-gut and the dressings applied. The man
 recovered from the anesthetic well, suffered no pain,
 and was conscious. The nausea and vomiting almost
 entirely ceased; the temperature became subnormal,
 and remained so until death took place on the fourth
 day, the patient being conscious to the last; the
 pulse ranged from 120 to 160. Nourishment was
 administered by the rectum after the operation, by
 means of beef-peptonoids, coffee, and eggs.

An autopsy was made twelve hours after death in
 a very great hurry; the stomach and duodenum
 were the only parts which were removed; the but-
 ton was found in place as described; the stomach-
 walls were thickened to about three times their
 natural thickness, the mass extending from the
 pylorus toward the cardiac orifice, a distance of
 about three inches; the pyloric orifice would not
 admit the tip of the little finger; the stomach was
 considerably dilated, the duodenum contracted;
 there was apparently no adhesion between the walls
 of the stomach and duodenum at the point where
 the button had been inserted.

I have been able to find records of twenty-one
 cases of gastro-enterostomy done with the Murphy
 button. These have not all been published in detail,
 but have been collected in tables by various writers on
 this subject; to this number I would add this case, the
 first in this State, making twenty-two in all. Of this

number twelve died, the time of death after the operation varying from a few hours to forty-six days. One died from continued hemorrhage, nine from exhaustion, one from broncho-pneumonia, one from septic peritonitis, from the fact that the tissues slipped from the grasp of the button, thus allowing the contents of the stomach and duodenum to escape into the peritoneal cavity. This would make the percentage of deaths 54.54. There have been, in all probability, other fatal cases which have not been reported, for there is a disposition among surgeons not to report their unsuccessful cases, and which if reported would swell the percentage of deaths. The results are certainly not very encouraging, and from a letter recently received from Dr. Murphy I infer that he is rather inclined to discourage operation on these cases except under the most favorable circumstances.

The operation of gastro enterostomy is, of course, only designed for temporary relief to the distressing symptoms of nausea, vomiting, and progressive exhaustion. Unfortunately a large percentage of these patients do not give their consent to operation until the exhaustion is so far advanced that the chances for recovery from operation are small. Had this patient consented to operation at the time it was first suggested to him he might have survived.

Intestinal approximation is a subject that is being much talked about, and our journals are full of articles bearing on it. The Murphy button has come in for its share of consideration, along with the various other mechanical methods of procedure, such as the Senn plates, potato plates, Robinson's hard

rubber plates, Abbe's catgut rings, etc. It is not my purpose to discuss the comparative virtues of these various measures, since I have nothing new to offer on the subject. From my own experience I can say that the button is an ingenious device which enables us to make an anastomosis quickly, thus shortening the time of exposure of the peritoneal contents to the atmosphere, and this is an important factor in this part of the country, for it is held by many that the peritoneal membrane cannot stand exposure as long in a dry atmosphere as it can in a moist one. The operation by means of the button requires a minimum amount of manipulation of the parts for its application, and when once properly applied it is secure. When the button escapes, as it does in the course of from fourteen to twenty days, it leaves a round, clean-cut and good-sized hole, which is not liable to contract subsequently. For this particular operation of gastro-enterostomy Dr. Murphy has devised an oblong button, but I am informed that he has returned to the use of the round button.

Every surgeon can learn many things from his own operations, as well as from those of others. In my small experience in this class of cases several points have been impressed on my mind. One is that one should not undertake to operate against time; the matter of a few seconds more or less makes no material difference. In making the incision for the introduction of the button one should not make it more than two-thirds the diameter of the button; the button can be gradually worked through a small hole; one should be sure that the silk that is used for the drawstring is strong enough to stand consid-

erable strain, and an ordinary cambric needle should be used for its introduction instead of a surgeon's needle; when the wall of the viscus is drawn up one should be certain that it is around the stem and not outside the spring, a thing that I have known to happen. One should be sure that the two portions of the button are pressed firmly, but not too firmly, together; if pressed too hard, it might cause the tissues to be cut through before adhesion had formed. There are imperfect buttons on the market; therefore every button should be carefully examined before being used; the spring should be neither too strong nor too weak, and the opposing surfaces should be broad and the spring-catch should be perfect.

CASE II.—Peter G., a Finlander and a coalminer, came to the hospital October 17th, having been injured in a coal-mine on October 14th, by having three tons of coal fall from the roof of a chamber on him while he was in a stooping posture. The great weight forced him to the floor, causing him to make what a contortionist would call a "split." When I saw him first he had a temperature of 101.5° F., and a pulse of 140; the belly was considerably swollen, tympanitic, and painful on pressure. The inner side of the left thigh and the lower portion of the abdominal wall on that side were ecchymotic and emphysematous; there was a fracture of the pelvis two inches to the left of the symphysis; a wound in the perineum two inches long communicated with the seat of fracture. The diagnosis was made of a compound fracture of the pelvis, acute peritonitis, with, probably, a perforation of the gut. The rapid development of peritonitis and symptoms of collapse, together with the presence of air in the subcutaneous tissues at the

seat of the fracture, led to the supposition that a sharp spicule of bone had penetrated the parietal peritoneal membrane and had produced a perforation of the gut. Although the case offered no great encouragement for a successful operation, an operation was decided upon. With the assistance of Dr. J. W. O'Connor the abdomen was opened in the median line, the gut examined carefully, and, after a good deal of searching, a circumscribed abscess was opened on the right side midway between the crest of the ilium and the last rib; this abscess-cavity contained pus of a fecal odor, due, as I found, to a perforation in the small gut one-fourth of an inch in diameter; no other abnormal condition was found within the abdominal cavity, with the exception of a simple peritonitis. Two inches of the gut were excised and an end-to-end anastomosis was made with a large-sized Murphy button. The intestines were so distended by gas that it was impossible to replace them within the abdominal cavity without first letting some of it out; so a small incision were made and, after a large quantity of gas was allowed to escape, a stitch was introduced to close the hole. The abdominal wound was stitched up and the patient died within an hour. The autopsy revealed a fracture of the pelvis two inches from the symphysis on the left side, communicating with the perineal wound. No wound of the peritoneal membrane could be found. The retroperitoneal tissues were filled with blood; all of the intra-abdominal organs were normal except at the place where the anastomosis was made; this point was found to be in the small gut two feet from the ileo-cecal valve.

The question in this case was the origin of the perforation, whether it was produced at the time of the accident, whether the gut was contused suffi-

ciently to cause a subsequent necrosis of the wall, or whether the perforation was the result of a pre-existing pathologic condition of the intestinal wall and entirely independent of the accident? No microscopic examination was made of the section of gut which was removed, as it was unfortunately lost. There was no external, visible sign of injury on the right side where the abscess-cavity was found; the autopsy showed no solution of continuity of the peritoneal membrane. It was my belief that the perforation was the result of processes which were in existence before the accident was received. The air in the subcutaneous tissue must have been drawn in by contraction of the muscles in the immediate neighborhood.

The technique of an entero-enterostomy is very simple, and has been so many times described that I will not dwell on it at this time. I regret that both cases resulted fatally, but it is to be said in behalf of the operator that both were extreme cases, not at all suited for operation with any great hope of success. Should another case present itself for operation in the same condition as the first one I would hesitate about operating. The second case was particularly hopeless, as acute peritonitis had set in, and the heart's action was bad; there were two sources of septic infection, the abscess-cavity and the perineal wound; and finally the nationality of the patient was against success, for I find that Finlanders as a class do not stand injury and surgical shock at all well.

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